

In the Specification

The following is a marked-up version of the specification with the language that is underlined (“___”) being added and the language that contains strikethrough (“—”) being deleted:

On page 1, lines 4-10.

CROSS-REFERENCE TO RELATED APPLICATION

This is a continuation of U.S. Patent Application Serial No. 09/657,047, filed August 28, 2000, entitled “Flame and Shrinkage Resistant Fabric Blends,” now U.S. Patent No. 6,626,964, which is a continuation-in-part application of U.S. Patent Application Serial No. 09/062,805, filed April 20, 1998, entitled “Flame and Shrinkage Resistant Fabric Blends and Method for Making Same,” (now U.S. Patent No. 6,132,476).

On page 9, lines 6 through 15.

The fabric of the present invention can be dyed and/or shrinkage controlled using customary dyeing equipment. Typically, a dye, a dye-assistent, and a flame retardant for the inherently flame resistant fibers, are combined to form a mixture[~~],~~] (e.g., a dyebath, solution, dispersion, or the like). Although the term “dye-assistent” is used herein, it is to be understood that this material is used even where the inherently flame resistant and/or flame resistant cellulosic fibers are not to be dyed. The fabric is then contacted with this mixture, typically by immersion, and the mixture heated. In accordance with the present invention, a fibrous textile material, *e.g.*, fiber, web, yarn, thread, sliver, woven fabric, knitted fabric, non-woven fabric, or the like, is placed in the bath with the additives using conventional equipment such as dye jets or other appropriate equipment.

In the Claims

The following is a marked-up version of the claims with the language that is underlined (“ ”) being added and the language that contains strikethrough (“~~—~~”) being deleted:

1. (Currently amended) A flame resistant fabric, comprising:
~~a plurality of~~ inherently flame resistant fibers that were uncrystallized in fiber form; and
~~a plurality of~~ cellulosic fibers containing a flame retardant compound;
wherein ~~said~~ the inherently flame resistant fibers comprise a material selected from the group consisting of aromatic polyamide, polyamide imide, polyimide, and ~~mixtures~~ combinations thereof;
wherein ~~said~~ the cellulosic fibers comprise a material selected from the group consisting of rayon, acetate, triacetate, lyocell, and ~~mixtures~~ combinations thereof.
2. (Currently amended) The fabric of claim 1, wherein ~~said~~ the inherently flame resistant fibers ~~are~~ comprise meta-aramid fibers.
3. (Currently amended) The fabric of claim 1, wherein ~~said~~ the cellulosic fibers ~~are~~ comprise rayon fibers.
4. (Currently amended) The fabric of claim 1, wherein ~~said~~ the fabric contains a residual amount of dye-assitant selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, and mixtures thereof.

5. (Currently amended) The fabric of claim 1, wherein ~~said~~ the fabric contains a phosphorus compound flame retardant in a concentration of at least approximately 1.4% phosphorus by weight of cellulosic fiber component.

6. (Currently amended) The fabric of claim 1, wherein ~~said~~ the fabric exhibits a duration of afterflame no greater than 2.0 seconds when subjected to a vertical flammability test conducted in accordance with FTMS 191A Method 5903.1 using a three second exposure.

7. (Currently amended) The fabric of claim 1, wherein ~~said~~ the fabric exhibits a shrinkage percentage of no greater than approximately 7% after 20 launderings conducted in accordance with AATCC Test Method 135-1992, Table I (3)(V)(A)(iii).

8. (Currently amended) The fabric of claim 1, wherein ~~said~~ the inherently flame resistant fibers of ~~said~~ the fabric have been dyed a shade of color which results in an L value between approximately 18 and the greige L value for ~~said~~ the fabric if ~~said~~ the inherently flame resistant fibers were used to form a fabric composed exclusively of ~~said~~ the inherently flame resistant fibers.

9. (Currently amended) A flame resistant fabric, comprising:
~~a plurality of~~ inherently flame resistant fibers that were uncrystallized in fiber form; and
~~a plurality of~~ cellulosic fibers that contain a flame retardant compound;
wherein ~~said~~ the fabric contains a residual amount of a dye-assistant selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, N,N-diethylbenzamide, hexadecyltrimethyl ammonium salt, N,N-dimethylbenzamide, N,N-diethyl-m-toluamide, N-octylpyrrolidone, aryl ether, an approximately 50/50 blend of N,N-dimethylcaprylamide and N,N-dimethylcapramide, and mixtures thereof.
10. (Currently amended) The fabric of claim 9, wherein ~~said~~ the dye-assistant is selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, and mixtures thereof.
11. (Currently amended) The fabric of claim 9, wherein ~~said~~ the inherently flame resistant fibers comprise a material selected from the group consisting of aromatic polyamide, polyamide imide, polyimide, and ~~mixtures~~ combinations thereof.
12. (Currently amended) The fabric of claim 9, wherein ~~said~~ the inherently flame resistant fibers ~~are~~ comprise meta-aramid fibers.
13. (Currently amended) The fabric of claim 9, wherein ~~said~~ the cellulosic fibers comprise rayon, acetate, triacetate, lyocell, or mixtures thereof.

14. (Currently amended) The fabric of claim 9, wherein ~~said~~ the cellulosic fibers ~~are~~ comprise rayon fibers.

15. (Currently amended) The fabric of claim 9, wherein ~~said~~ the fabric contains a phosphorus compound flame retardant in a concentration of at least approximately 1.4% phosphorus by weight of cellulosic fiber component.

16. (Currently amended) The fabric of claim 9, wherein ~~said~~ the fabric exhibits a duration of afterflame no greater than 2.0 seconds when subjected to a vertical flammability test conducted in accordance with FTMS 191 Method 5903.1 using a three second exposure.

17. (Currently amended) The fabric of claim 9, wherein ~~said~~ the fabric exhibits a shrinkage percentage of no greater than approximately 7% after 20 launderings conducted in accordance with AATCC Test Method 135-1992, Table I (3)(V)(A)(iii).

18. (Currently amended) The fabric of claim 9, wherein ~~said~~ the inherently flame resistant fibers of ~~said~~ the fabric have been dyed a shade of color which would result in an L value between approximately 18 and the greige L value for ~~said~~ the fabric if ~~said~~ the inherently flame resistant fibers were used to form a fabric composed exclusively of ~~said~~ the inherently flame resistant fibers.

19. (Currently amended) A flame resistant fabric, comprising:
a ~~plurality of~~ inherently flame resistant fibers that were uncrystallized in fiber form; and
a ~~plurality of~~ cellulosic fibers that contain a ~~flame-retardant~~ phosphorus compound;
wherein ~~said~~ the fabric contains a phosphorus compound ~~flame-retardant~~ in a concentration of at least approximately 1.4% phosphorus by weight of cellulosic fiber component.

20. (Currently amended) The fabric of claim 19, wherein ~~said~~ the inherently flame resistant fibers comprise a material selected from the group consisting of aromatic polyamide, polyamide imide, polyimide, and ~~mixtures~~ combinations thereof.

21. (Currently amended) The fabric of claim 19, wherein ~~said~~ the inherently flame resistant fibers ~~are~~ comprise meta-aramid fibers.

22. (Currently amended) The fabric of claim 19, wherein ~~said~~ the cellulosic fibers comprise rayon, acetate, triacetate, lyocell, or ~~mixtures~~ combinations thereof.

23. (Currently amended) The fabric of claim 19, wherein ~~said~~ the cellulosic fibers ~~are~~ comprise rayon fibers.

24. (Currently amended) The fabric of claim 19, wherein ~~said~~ the fabric contains a residual amount of dye-assitant selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, and mixtures thereof.

25. (Currently amended) The fabric of claim 19, wherein ~~said~~ the fabric exhibits a duration of afterflame no greater than 2.0 seconds when subjected to a vertical flammability test conducted in accordance with FTMS 191A Method 5903.1 using a three second exposure.

26. (Currently amended) The fabric of claim 19, wherein ~~said~~ the fabric exhibits a shrinkage percentage of no greater than approximately 7% after 20 launderings conducted in accordance with AATCC Test Method 135-1992, Table I (3)(V)(A)(iii).

27. (Currently amended) The fabric of claim 19, wherein ~~said~~ the inherently flame resistant fibers of ~~said~~ the fabric have been dyed a shade of color which would result in an L value between approximately 18 and the greige L value for ~~said~~ the fabric if ~~said~~ the inherently flame resistant fibers were used to form a fabric composed exclusively of ~~said~~ the inherently flame resistant fibers.

28. (Currently amended) A flame resistant fabric, comprising:
~~a plurality of~~ inherently flame resistant fibers that were uncrystallized in fiber form; and
~~a plurality of~~ cellulosic fibers that contain a flame retardant compound;
wherein ~~said~~ the fabric exhibits a duration of afterflame no greater than 2.0 seconds when subjected to a vertical flammability test conducted in accordance with FTMS 191A Method 5903.1 using a three second exposure.

29. (Currently amended) The fabric of claim 28, wherein ~~said~~ the inherently flame resistant fibers comprise a material selected from the group consisting of aromatic polyamide, polyamide imide, polyimide, and ~~mixtures~~ combinations thereof.

30. (Currently amended) The fabric of claim 28, wherein ~~said~~ the inherently flame resistant fibers ~~are~~ comprise meta-aramid fibers.

31. (Currently amended) The fabric of claim 28, wherein ~~said~~ the cellulosic fibers comprise rayon, acetate, triacetate, lyocell, or ~~mixtures~~ combinations thereof.

32. (Currently amended) The fabric of claim 28, wherein ~~said~~ the cellulosic fibers ~~are~~ comprise rayon fibers.

33. (Currently amended) The fabric of claim 28, wherein ~~said~~ the fabric contains a residual amount of dye-assistent selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, and mixtures thereof.

34. (Currently amended) The fabric of claim 28, wherein ~~said~~ the fabric exhibits a shrinkage percentage of no greater than approximately 7% after 20 launderings conducted in accordance with AATCC Test Method 135-1992, Table I (3)(V)(A)(iii).

35. (Currently amended) The fabric of claim 28, wherein ~~said~~ the inherently flame resistant fibers of ~~said~~ the fabric have been dyed a shade of color which would result in an L value between approximately 18 and the greige L value for ~~said~~ the fabric if ~~said~~ the inherently flame resistant fibers were used to form a fabric composed exclusively of ~~said~~ the inherently flame resistant fibers.

36. (Currently amended) A flame resistant fabric, comprising:
~~a plurality of~~ inherently flame resistant fibers that were uncrystallized in fiber form; and
~~a plurality of~~ cellulosic fibers that contain a flame retardant compound;
wherein ~~said~~ the fabric exhibits a shrinkage percentage of no greater than approximately 7% after 20 launderings conducted in accordance with AATCC Test Method 135-1992, Table I (3)(V)(A)(iii).

37. (Currently amended) The fabric of claim 36, wherein ~~said~~ the inherently flame resistant fibers comprise a material selected from the group consisting of aromatic polyamide, polyamide imide, polyimide, and ~~mixtures~~ combinations thereof.

38. (Currently amended) The fabric of claim 36, wherein ~~said~~ the inherently flame resistant fibers ~~are~~ comprise meta-aramid fibers.

39. (Currently amended) The fabric of claim 36, wherein ~~said~~ the cellulosic fibers comprise rayon, acetate, triacetate, lyocell, or ~~mixtures~~ combinations thereof.

40. (Currently amended) The fabric of claim 36, wherein ~~said~~ the cellulosic fibers ~~are~~ comprise rayon fibers.

41. (Currently amended) The fabric of claim 36, wherein ~~said~~ the fabric contains a residual amount of dye-assistant selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, and mixtures thereof.

42. (Currently amended) The fabric of claim 36, wherein ~~said~~ the inherently flame resistant fibers of ~~said~~ the fabric have been dyed a shade of color which would result in an L value between approximately 18 and the greige L value for ~~said~~ the fabric approximately if ~~said~~ the inherently flame resistant fibers were used to form a fabric composed exclusively of ~~said~~ the inherently flame resistant fibers.

43. (Currently amended) A flame resistant fabric, comprising:
~~a plurality of~~ inherently flame resistant fibers that were uncrystalized in fiber form; and
~~a plurality of~~ cellulosic fibers that contained a flame retardant compound in fiber form.

44. (Currently amended) The fabric of claim 43, wherein ~~said~~ the fabric contains a residual amount of a dye-assistant selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, N,N-diethylbenzamide, hexadecyltrimethyl ammonium salt, N,N-dimethylbenzamide, N,N-diethyl-m-toluamide, N-octylpyrrolidone, aryl ether, an approximately 50/50 blend of N,N-dimethylcaprylamide and N,N-dimethylcapramide, and mixtures thereof.

45. (Currently amended) The fabric of claim 43, wherein ~~said~~ the dye-assistant is selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, and mixtures thereof.

46. (Currently amended) The fabric of claim 43, wherein ~~said~~ the inherently flame resistant fibers comprise a material selected from the group consisting of aromatic polyamide, polyamide imide, polyimide, and ~~mixtures~~ combinations thereof.

47. (Currently amended) The fabric of claim 43, wherein ~~said~~ the inherently flame resistant fibers ~~are~~ comprise meta-aramid fibers.

48. (Currently amended) The fabric of claim 43, wherein ~~said~~ the cellulosic fibers comprise rayon, acetate, triacetate, lyocell, or ~~mixtures~~ combinations thereof.

49. (Currently amended) The fabric of claim 43, wherein ~~said~~ the cellulosic fibers ~~are~~ comprise rayon fibers.

50. (Currently amended) The fabric of claim 43, wherein ~~said~~ the fabric contains a phosphorus compound flame retardant in a concentration of at least approximately 1.4% phosphorus by weight of cellulosic fiber component.

51. (Currently amended) The fabric of claim 43, wherein ~~said~~ the fabric exhibits a duration of afterflame no greater than 2.0 seconds when subjected to a vertical flammability test conducted in accordance with FTMS 1431 Method 5903.1 using a three second exposure.

52. (Currently amended) The fabric of claim 43, wherein ~~said~~ the fabric exhibits a shrinkage percentage of no greater than approximately 7% after 20 launderings conducted in accordance with AATCC Test Method 135-1992, Table I (3)(V)(A)(iii).

53. (Currently amended) The fabric of claim 43, wherein ~~said~~ the inherently flame resistant fibers of ~~said~~ the fabric have been dyed a shade of color which would result in an L value between approximately 18 and the greige L value for ~~said~~ the fabric if ~~said~~ the inherently flame resistant fibers were used to form a fabric composed exclusively of ~~said~~ the inherently flame resistant fibers.

54. (Currently amended) A flame resistant fabric, comprising:

a ~~plurality of~~ dyed, inherently flame resistant fibers that were uncolored in fiber form; and
a ~~plurality of~~ cellulosic fibers that contained a flame retardant compound in fiber form.

55. (Currently amended) The fabric of claim 54, wherein ~~said~~ the fabric contains a residual amount of a dye-assistant selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, N,N-diethylbenzamide, hexadecyltrimethyl ammonium salt, N,N-dimethylbenzamide, N,N-diethyl-m-toluamide, N-octylpyrrolidone, aryl ether, an approximately 50/50 blend of N,N-dimethylcaprylamide and N,N-dimethylcapramide, and mixtures thereof.

56. (Currently amended) The fabric of claim 54, wherein ~~said~~ the dye-assistant is selected from the group consisting of N-cyclohexylpyrrolidone, benzyl alcohol, N,N-dibutylformamide, and mixtures thereof.

57. (Currently amended) The fabric of claim 54, wherein ~~said~~ the inherently flame resistant fibers comprise a material selected from the group consisting of aromatic polyamide, polyamide imide, polyimide, and ~~mixtures~~ combinations thereof.

58. (Currently amended) The fabric of claim 54, wherein ~~said~~ the inherently flame resistant fibers ~~are~~ comprise meta-aramid fibers.

59. (Currently amended) The fabric of claim 54, wherein ~~said~~ the cellulosic fibers comprise rayon, acetate, triacetate, lyocell, or ~~mixtures~~ combinations thereof.

60. (Currently amended) The fabric of claim 54, wherein ~~said~~ the cellulosic fibers ~~are~~ comprise rayon fibers.

61. (Currently amended) The fabric of claim 54, wherein ~~said~~ the fabric contains a phosphorus compound flame retardant in a concentration of at least approximately 1.4% phosphorus by weight of cellulosic fiber component.

62. (Currently amended) The fabric of claim 54, wherein ~~said~~ the fabric exhibits a duration of afterflame no greater than 2.0 seconds when subjected to a vertical flammability test conducted in accordance with FTMS 1431 Method 5903.1 using a three second exposure.

63. (Currently amended) The fabric of claim 54, wherein ~~said~~ the fabric exhibits a shrinkage percentage of no greater than approximately 7% after 20 launderings conducted in accordance with AATCC Test Method 135-1992, Table I (3)(V)(A)(iii).

64. (Currently amended) The fabric of claim 54, wherein ~~said~~ the inherently flame resistant fibers of ~~said~~ the fabric have been dyed a shade of color which would result in an L value between approximately 18 and the greige L value for ~~said~~ the fabric if ~~said~~ the inherently flame resistant fibers were used to form a fabric composed exclusively of ~~said~~ the inherently flame resistant fibers.

REMARKS

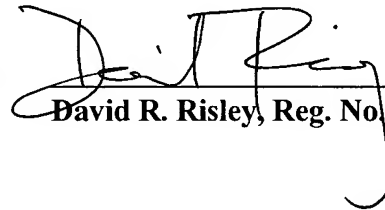
It is believed that the foregoing amendments and additions add no new matter to the present application.

Favorable action in regard to the application is earnestly solicited.

Respectfully submitted,

**THOMAS, KAYDEN, HORSTEMEYER
& RISLEY, L.L.P.**

By:


David R. Risley, Reg. No. 39,345

100 Galleria Parkway
Suite 1750
Atlanta, Georgia 30339-5948
(770) 933-9500

Docket No. 011920-1274